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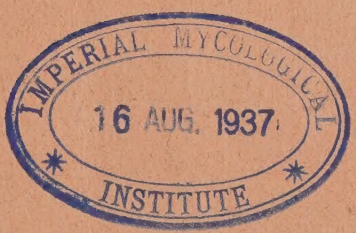

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INTERNATIONAL BULLETIN
OF PLANT PROTECTION

1937 No. 8

DISCOVERIES AND CURRENT EVENTS *

Argentine Republic: The Effects of Rust on the Poplar Groves of the Delta †

The Special Commission of the Delta presided over by Dr. Andrés Máspero Castro has just accomplished an extensive tour of inspection of the Delta poplar groves which comprised the following sections: Rio Luján, Canal Arias, Canal de la Serna, Paraná Miní, Paraná Guazú, Rio Bravo, Canal Leandro N. Alem and Paraná de las Palmas.

The purpose of this tour was to verify in the said area, if the suspicion held by the islanders that the plants dried up owing to the harmful action of rust, were justifiable, and if it was necessary to accelerate cutting of the poplars.

The Comission took the opportunity of observing the general condition of the poplars attacked by rust, having examined a sufficient number of diseased plants in various stages of cultivation and development. As a first result of this investigation, it was found that rust was extensively established and the damage caused very serious, although the intensity of the attack was not uniform. There are plantations heavily defoliated where scarcely the tops of the trees bear leaves, other with the leaves badly attacked which from a distance appear as if scorched with fire, and finally those only lightly attacked, the trees still having a luxuriant foliage. Only a few dried up trees were observed.

The rust which attackes poplars is *Melampsora larici-populina*, Kleb., a species new to the country, whose appearance was first reported by the Phytopathological Division of the Ministry of Agriculture last summer, when it was verified for the first time as a disease of poplars in the islands of the Delta (see this *Bulletin*, 1936, No. 7, pp. 145-146). The identification of the fungus was confirmed by the P. Luis Unamuno of Madrid and Ernst Gäumann of Zurich to whom specimens were sent for examination.

It is of interest to note that in Europe this rust attacks nearly all species of European poplars (*Populus nigra, P. nigra* var. *italica, P. augustifolia, P. balsamifera, P. berolinensis, P. canadensis, P. cordata, P. fremonti, P. salicifolia, P. serotina*, etc.), but not *P. monilifera*, which fact is also noted in the plantations of

* Under this and the next heading the countries are arranged in French alphabetical order.

† Communication from the official correspondent of the Institute, Mr. JUAN B. MARCHIONATTO, Agronomical ' Ingenieur ', Director of ' Sanidad Vegetal ', Ministry of Agriculture, Buenos Aires, Argentine Republic.

the Delta, however — as is known — this poplar is attacked by another rust, *M. allii-populina*, Kleb.

The effects of rust are well known. It attacks the leaves, exhausting reserve material and finally causing leaf fall; however, the duration of this process varies from one to several months, and depends on the intensity of the attack. To replace the fallen leaves, the plant produces further foliage which is attacked by the parasite which may bring about a repetition of the leaf fall phenomenon. The oldest trees containing a greater quantity of accumulated reserve material are better able to resist this disease.

By its mode of operation poplar rust does not kill off the plants but its effects will be especially felt in the wood whose growth will be retarded in the years following the attack.

There is no doubt that the existence of other diseases such as ' viruela ' (*Septoria populi*) and ' antracnosis ' (*Sphaceloma populi*) which make their appearance with a certain frequency accompanying the poplar rust aggravates its harmful action, however, even so, it cannot be maintained *a priori* that the disease kills off the plants. The ' manchas ' of dried up poplars have another origin and the cause is being investigated at the Phytopathological Laboratory, Campana.

Finally, the above-said Commission does not consider the immediate cutting down of the trees attacked by rust necessary and agrees that the islanders before adopting any remedy whatsoever, must await the results of a study for finding an adequate solution to the problem of the periodical appearance of the disease.

The following members of the aforesaid Commission participated in this tour: Mr. Juan B. Marchionatto, Agronomical ' Ingenieur ', Director of ' Sanidad Vegetal '; Mr. Franco E. Devoto, Agronomical ' Ingenieur ', Chief of the Technical Section of Forests of the ' Direccion de Tierras '; Mr. César Cornell, ' Agrónomo Regional ' of the Delta; Dr. Luis Müller and Don Angel Ruiz, representatives of the farmers of the Delta.

Brazil: New Plant Diseases Reported in the State of Minas Geraes during 1936 *

Amygdalus persica	*Exoascus deformans* (Berk.) Fuck. at Itajubá.
Brassica oleracea var. *capitata*	*Botrytis* sp.
Capsicum annuum	*Bacillus carotovorus* Jones.
C. microcarpum	*Puccinia paulensis* Rangel.
	Mosaic (severe attack).

* Communication from Mr. ALBERT S. MÜLLER, formerly Professor of Phytopathology at the Higher School of Agriculture and Veterinary Science, Viçosa, State of Minas Geraes, Brazil, now Phytopathologist at the Central Experiment Station of the Ministry of Agriculture and Stock Breeding, Caracas, Venezuela.

Citrus sp.	*Corticium salmonicolor* Berk. and Broome at Lavras (severe attack).
	Psorosis at Viçosa, Ponte Nova, Bello Horizonte and Lavras.
	Chlorosis at Leopoldina.
Crotalaria juncea	*Ceratostomella fimbriata* (E. and H.) Elliott (severe attack).
Daucus carota	*Cercospora carotae* (Pass.) Kazn. and Siem.
Delphinium sp.	*Sclerotium rolfsii* Sacc.
Gossypium sp.	*Scler. rolfsii* Sacc.
Lycopersicum esculentum	*Scter. rolfsii* Sacc.
Nerium oleander	*Botrytis* sp.
Tagetes sp.	*Botrytis* sp.
Vitis sp.	*Oidium tuckeri* Berk. at Bello Horizonte (severe attack).
	Sphaceloma ampelinum De By.

Egypt: Occurrence and Movements of Locusts in the Country *

On June 19th, 1937, locusts were reported from Mersa Matruh in the northern part of the Western Desert. A sample sent proved on identification to contain adults and nymphs of *Schistocerca gregaria*, Forsk., both of the migratory and solitary phases. The whole region extending from Amria (Lat. 31° Long. 29° 50) to Sellum on the Western frontier and to Siwa Oasis in the South (Lat. 29° 15 Long. 25°) revealed the presence of both phases of *Schistocerca* in their different nymphal instars as well as adults in more than thirty localities scattered along the coastal region of that part of the desert. Fresh hatching took place practically in every locality during the period from June 21st to June 30th. No exact information is yet available regarding the origin of this locust invasion although rumour has it that some *Schistocerca* appeared this spring on the other side of the Western frontier namely in Tripoli and that they were controlled. This point is being investigated at present.

Infestation is not dense, the areas being separated, varying in size and population.

Heavy rains have fallen in this part of the Western Desert during April, 1937 when barley cultivations were about to be harvested.

The main control methods adopted are baiting, spraying and burning.

The locusts take refuge on and under desert shrubs where one or other method is applied according to circumstances.

No serious damage has yet occurred to the scanty cultivations of this area.

Other parts of the desert are being scouted by car and camel patrols.

* Communication from the Director of the Entomological Section, Ministry of Agriculture, Egypt to the International Institute of Agriculture.

Eritrea: Locusts *

During the months of April and May, 1937, no locust movements were reported throughout the Colony.

Irish Free State: A New Outbreak of *Peronospora antirrhini* in the Country †

The parasitic fungus *Peronospora antirrhini* Schroet. was found for the first time attacking seedlings of the cultivated *Antirrhinum majus* in a nursery at Carlow, Ireland, in May, 1936. The attack was a severe one, 50,000 plants being destroyed. Immediate steps were taken to deal with the outbreak by destruction of the plants, fumigation, cleaning and disinfection of houses, by provision of new frames and boxes, and disposal of the contaminated soil at a distance. It was hoped that the eradication was successful, for a splendid crop of 25,000 plants was raised in the nursery in 1937 without any sign of disease, but unfortunately right at the end of the season the mildew again appeared on a few of the last plants to be grown.

In most cases the growing points of the seedlings are killed back first and the lower leaves then wither from the tip backwards. Before this stage is reached indefinite pale areas develop on the leaves, and these show the presence of a fine and almost invisible whitish mildew on the lower surface. The conidiophores are 250 μ high, and the conidia are hyaline and oval, 26 × 17.5 μ. Resting spores 30 μ in diameter are formed in the leaves and the fungus survives by means of these in vegetable refuse and soil.

The attack is worst during April and May, and experience up to the present indicates that if the disease is controlled in the seedling stage, the plants may afterwards grow and flower almost normally. The dark-coloured varieties appear to suffer most.

The original source of the infection cannot be traced. Antirrhinum plants were imported to the nursery in question in 1935, but there is no evidence that these were affected, and the disease has not been recorded in the country of their origin.

Mozambique: Locust Movements (*Nomadacris septemfasciata* and *Locusta migratoria migratorioides*) §

During the month of February, 1937, the North of the Colony continued to be attacked although only in a slight degree. In the central region, in the Zambezi Province and chiefly in Barué, considerable hopper bands have been reported.

* Communication from Dr. LUIGI M. BOLOGNA, Chief in Charge of the Agricultural Bureau of Eritrea, Asmara, transmitted to the International Institute of Agriculture by the Government of the Colony.

† Communication from the official correspondent of the Institute, Dr. PAUL A. MURPHY, Albert Agricultural College, Glasnevin, Dublin, Irish Free State.

§ Communication from Mr. JÚLIO GARDÉ ALFARO CARDOSO, Chief of the Section of Entomology, Lourenço Marques, transmitted to the Institute by the 'Repartição Técnica de Agricultura' of the Colony.

In the South, no information was obtainable owing to the inundations caused by the heavy rains occurring during the month.

It is known that hopper bands had made their appearance, many of which on the borders of the rivers, and consequently must have disappeared during the inundations.

Control operations have just been terminated.

Southern Rhodesia: Locust Invasion, 1932-1937 *

Monthly Report No. 54. May, 1937.

The winged swarms of the Red Locust (*Nomadacris septemfasciata*, Serv.) reported as having appeared in the North Eastern districts of the Colony during last month have remained throughout May confined to practically the same area.

The districts mentioned during May are Lomagundi, Mazoe, Inyanga, Makoni, and Salisbury township itself towards the end of the month.

Considerable local damage has been reported in one part of the Inyanga district, due to several swarms which had lingered in the vicinity for a week or more.

Whilst no locust hoppers are known to have appeared in swarm formation on the higher veld during the past season, several specimens of last stage solitary hoppers of the Red Locust were taken in the Mazoe district during May, indicating breeding by scattered adults.

Italian Somaliland: Locusts †

No locust movements were reported in the Colony during the month of April, 1937.

LEGISLATIVE AND ADMINISTRATIVE MEASURES

Algeria. — A Decree of the Governor General, dated 25 March, 1937, relative to the shipment of Algerian potatoes abroad, establishes, *inter alia*, that the tubers intended for export shall be sound and free from diseases which lower their value.

The phytopathological certificates established by the Plant Protection Service of the Government General for Algerian potatoes intended for export, will

* Communication from the official correspondent of the Institute, Mr. RUPERT W. JACK, F. E. S., Chief Entomologist, Agricultural Laboratory, Department of Agriculture, Salisbury, Southern Rhodesia.

† Communication from Dr. FERRANTE PÀVERI-FONTANA, Chief in Charge of the Bureau of Agriculture of Italian Somaliland, Mogadiscio, transmitted to the International Institute of Agriculture by the Government of the Colony.

not be issued unless on presentation of the control certificate of the Algerian Office of economic and tourist movement (' Ofalac '). (*Journal officiel de l'Algérie*, Alger, 2 avril 1937, 11e année, nº 14, p. 337-338).

Germany. — Two Decrees of 15 April, 1937, relative to the outbreak of the Colorado beetle (*Leptinotarsa decemlineata*) restrict the dispositions regarding the protection and control measures against this insect.

The first of these Decrees gives general dispositions which will be applied to a zone definitely delimited in an appendix of this Decree and nominated danger zone (' Gefahrzone '). Within this zone, all lands under agricultural, vegetable and horticultural crops, and in particular, those grown with potatoes, tomatoes, egg-plants and other solanaceous plants are subjected to an official control.

The technical management and the control of protective measures has been transferred from the Corporation of Agriculture (' Reichsnährstand ') to a special Service (' Kartoffelkäferabwehrdienst ') organized for this purpose.

Every land owner and also any other person who may have noticed the presence of the Colorado beetle or any symptoms which might possibly denote the presence of this insect are obliged to make an immediate declaration to this effect.

In order to ascertain the eventual presence of the Colorado beetle, it will be possible for the competent authorities to organize control inspections at determined periods.

Every proprietor of land cultivated with potatoes and tomatoes is obliged to examine his crops at fixed intervals, in order to ascertain the possible presence of the Colorado beetle.

The second Decree deals with control measures which will apply to the region definitely delimited in an appendix of this Decree and considered as being an infested region.

The proprietors and tenants of fields cultivated with potatoes situated in this region are obliged to make repeated applications of calcium arsenate. The special protection Service will notify the period during which this treatment must be carried out; the said Service will also indicate the method to be adopted and will control the carrying out of the technical operations. This Service is authorized to execute this operation direct, at the expense of the persons interested.

The tops of potato plants which have not been treated with calcium arsenate must not be utilized as stable litter. (*Amtliche Pflanzenschutzbestimmungen*, Berlin, 1. Mai 1937, Bd. IX, Nr. 4, S. 81-85).

Argentine Republic. — The Decree No. 105,000 of 4 May, 1937 establishes that the Decree No. 82,526 of 15 May, 1936 [see this *Bulletin*, 1936 No. 10, p. 223] relative to seed production of Sudan grass [*Sorghum vulgare* var. *sudanense*], and sweet sorghum [*S. vulgare* var. *saccharatum*], will come into force on 1 July, 1937. (*Boletín Oficial de la República Argentina*, Buenos Aires, 28 de mayo de 1937, año XLV, núm. 12.862, pág. 6645).

*** By Decree No. 105.155 of 5 May, 1937, the ' Dirección de Defensa Agrícola ' is charged of the sale of barriers to farmers for the control of the South American locust [*Schistocerca paranensis*]. (*Ibid.*).

Egypt. — A Decree of 14 April, 1937, determines the tariff of the costs in spraying trees attacked by the scale insects *Chrysomphalus ficus*, *Lepidosaphes pinnaeformis* and *Chrys. personatus* [= *Aonidiella personata*]. (*Journal officiel du Gouvernement égyptien*, Le Caire, 26 avril 1937, 64ème année, nº 35, p. 3).

United States of America. — By the revised rules and regulations supplemental to Notice of Quarantine No. 63, on account of the white pine blister rust (*Cronartium ribicola* Fischer), Maryland, Ohio, Pennsylvania, and Wisconsin are added to the list of States which have established blister rust control areas wherein both the planting and possession of currant and gooseberry plants (plants, cuttings, or scions, belonging to the genera *Ribes* L. and *Grossularia* [Tourn.] Mill., including cultivated or wild or ornamental sorts) are prohibited under State authority.

The conditions under which Federal pine-shipping permits may be issued are modified so that permits may be granted to authorize the interstate movement of five-leaved pines (*Pinus ayacahuite*, *P. aristata*, *P. balfouriana*, *P. flexilis*, *P. strobiliformis*, *P. lambertiana*, *P. monticola*, *P. albicaulis*, *P. strobus*, *P. peuce*, *P. armandi*, *P. excelsa*, *P. parviflora*, *P. koraiensis*, and *P. cembra*) which have not been raised from seed under Ribes-free conditions when in the judgement of the Bureau of Entomology and Plant Quarantine there is little or no risk of such pines being involved in blister-rust infection.

The regulations pertaining to five-leaved pines are also revised to prohibit their interstate movement when visibly infected with the white pine blister rust unless such trees are shipped in a preservative or are authorized by the United States Department of Agriculture.

These revised rules and regulations have been approved on 16 February, 1937 and are effective on and after 1 March, 1937. (*B. E. P. Q.* – *Q. 63*, [Washington, D. C.], 1937, 6 pp.).

*** Pursuant to authority vested in the Bureau of Entomology and Plant Quarantine under regulation 6 of the revised rules and regulations supplemental to Notice of Quarantine No. 61, revised, which provides that permits may be issued for the interstate movement of cottonseed from the regulated area on such conditions as may be prescribed by that Bureau, the Bureau hereby approves the following alternative treatment for cottonseed and permits may be issued for the interstate movement of cottonseed so treated :—

When the cottonseed has been sterilized to 145º F. as a part of the continuous process of ginning, and in addition has been treated by sulphuric acid and screening, and subsequently has been protected from contamination in a manner satisfactory to the inspector. (*B. E. P. Q.* — *436*, Washington, D. C., April 1, 1937, 1 p. [Mimeographed]).

*** A joint Resolution of the Congress approved on 6 April, 1937, makes the sum of $ 2,000,000 available for the control of incipient or emergency outbreaks of insect pests or plant diseases, including grasshoppers [*Acrididae*], Mormon crickets [*Anabrus simplex*], and chinch bugs [*Blissus leucopterus*]. (*Public Resolution — No. 20 — 75th Congress. Chapter 69 - 1st Session. S. J. Res. 75*, [Washington, 1937], 1 p.).

France. — A Ministerial Decree of 30 April, 1937 delimits the zones declared infested with the Colorado beetle [*Leptinotarsa decemlineata*] and also the protection zones.

The Ministerial Decrees regarding previous delimitations are annulled. (*Journal officiel de la République française*, Paris, 19 mai 1937, LXIX[e] année, n° 114 p. 5420-5433).

Italy. — The Royal Decree-Law No. 784 of 19 April, 1937, promulgates the Commercial Agreements made between Italy and Argentine Republic, signed at Buenos Aires, 4 March, 1937.

According to Article 3 of the Additional Protocol to the Commercial Convention between Italy and Argentine Republic, of 1 June, 1894. the high contracting parties undertake not in any way to interfere with the mutual trade by prohibitions or restrictions regarding imports, exports or transit. However, some exceptions to this rule, on the condition that such exceptions should be applicable to all foreign countries or to countries sustaining identical conditions may be made, *inter alia*, for reasons of public health, and for the purpose of protecting animals and useful plants against diseases, insects and parasites. (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 7 giugno 1937, anno 78°, n. 130, pp. 2078-2080).

*** By Decree of the Minister of Finance, dated 12 May, 1937 the application of the exchange duty at the reduced rate of 0.50 lire, is extended, from 1 June, 1937, to the parasiticides 'Coccidol' and 'Fitodrin'. (*Ibid.*, 7 giugno 1937, n. 130, p. 2084).

*** By Decree of the Minister of Finance, dated 19 April, 1937, the application of the exchange duty, at the reduced rate of 0.50 lire per cent., is extended from 1 May, 1937 to the parasiticide 'Volck Invernale'. (*Ibid.*, 8 giugno 1937, n. 131, p. 2104).

*** By Ministerial Decree of 27 April, 1937, the common bee-eater (*Merops apiaster*) is included in the list of harmful animals, in virtue of the measures of Art. 4 of the sole text of the Laws and Decrees regarding the protection of game and shooting, approved by Decree No. 117 of 15 January, 1931, exclusively in the districts where apiculture is practised on a large scale, and where this bird abounds as a result of favourable climatic conditions and environment.

The shooting and capture of this species of bird are only authorized within a radius of 500 metres of the apiary, and are in order even when the shooting season is closed, according to the dispositions indicated in Art. 26 of the aforesaid text. (*Ibid.*, 11 maggio 1937, n. 108, p. 1733).

*** By Ministerial Decree of 30 April, 1937, the Ministerial Decree of 28 February, 1934 [see this *Bulletin*, 1934, No. 4, p. 81] which included wild-rabbits among noxious animals in the commune of Naro, Agrigento Province, is repealed. (*Ibid.*, 12 maggio 1937, n. 109, p. 1747).

*** By two Ministerial Decrees of 4 May, 1937, the territories of the communes of Cavriglia and Loro Ciuffenna, Arezzo Province, and S. Arcangelo di Lucania and Gallicchio, Potenza Province, have been declared infested by grape phylloxera. (*Ibid.*, 9 giugno 1937, n. 132, p. 2118).

*** By three Ministerial Decrees of 31 May, 1937, have been established the technical regulations to be observed in the export of peaches, plums and table grapes respectively.

These stipulate, *inter alia*, that it is forbidden to despatch fruits which are not sound, and in the case of peaches, fruits affected with ' mal della scatola ' evident from the external appearance. (*Ibid.*, 11 giugno 1937, n. 134, pp. 2160-2169).

Morocco (French Zone). — By Decree of the Director of Economic Affairs, dated 5 April, 1937, the list of countries infested by the Colorado beetle [*Leptinotarsa decemlineata*] enumerated in Article 1 of the Decree of 3 September, 1936 [see this *Bulletin*, 1936, No. 11, pp. 246-247], is completed as follows:—

' ....Germany, Luxemburg '. (Empire chérifien. Protectorat de la République française au Maroc. *Bulletin officiel*, Rabat, 23 avril 1937, XXVI[e] année, n° 1278, p. 558).

*** A Decree of the Director of Waters and Forests, dated 29 April, 1937, authorizes the destruction of boars causing considerable damage to the crops grown in the district of the posts of civil control Tedders and Oulmès. (*Ibid.*, 7 mai 1937, n° 1280, p. 654).

Nicaragua. — By Law of 28 July, 1936, the proprietors, lessees or all occupiers of land under cotton cultivation, are obliged to carry out the following measures for the control of the ' picudo ' (*Anthonomus*) of cotton:—

(*a*) Treating the seeds used for planting with carbon disulphide at the minimum rate of 100 grams per cubic metre of the fumigation chamber. If carbon disulphide is unavailable, the seeds shall be treated with hydrocyanic acid gas in the proportion of 60 grams per cubic metre of the fumigation chamber.

(*b*) Destroying the cotton shrubs growing outside the cultivated fields, as well as wild cotton plants and all other Malvaceae, growing in the vicinity of same, in order to prevent them acting as host plants for the ' picudo ', and con-

sequently being a menace to the plantations, at the same maintaining the cultivated area free from all other weeds.

(*c*) Applying sprays when the insect makes its appearance.

(*d*) Completely destroying the cotton plants and freeing the field from all noxious weeds, immediately after harvesting, burning all debris.

(*e*) Not utilizing the cuttings or twigs of the cotton plant.

The sowing of seed not previously disinfected is prohibited. In the same way, all persons who sell or regale cotton seed for sowing, for the extraction of the oil or for any other industrial purpose, are obliged to notify the Ministry of Agriculture with regard to the quantity sold or given, and also the name and residence of the person receiving same. It also remains compulsory to burn all excess seed remaining after harvesting. (*La Gaceta*, Managua, D. N., 22 de diciembre de 1936, año XL, núm. 281, págs. 2425 y 2426).

Peru. — It having been ascertained that the avocado [*Persea gratissima*] plantations of the Moquegua and Ica valleys are attacked by anthracnose (*Physalospora perseae*), by Resolution of 16 February, 1937, the said disease is declared to be a pest to national agriculture.

The control of this disease in the avocado orchards situated in the afore-mentioned valleys is compulsory, which measures shall be directed by the technical staff of the Agricultural Services of the respective valleys.

In the export of avocado pears from the valleys of Maquegua and Ica to Chile, it is indispensable to obtain in advance a health certificate from the respective Agricultural Services. The said certificates may only be granted after special experts have proved that in the valleys from which the fruits originate, the cankers produced by the fungous parasite have been destroyed and that a systematic elimination is being carried out. (*La Vida Agrícola*, Lima (Perú), abril 1º. de 1937, vol. XIV, nº 161, págs. 345 y 346).

Italian Somaliland. — By Decree of the Governor, No. 12257 of 11 January, 1937, an Agricultural Station has been established at Jonte with the object, *inter alia*, of carrying out the phytosanitary control of bananas intended for export. (*Bollettino ufficiale della Somalia italiana*, Mogadiscio, 31 gennaio 1937, anno XXVII, n. 2, p. 27).

Tunis. — By Decree of the Director of Economic Affairs dated 17 April, 1937, the Service of Botany and Agronomy is authorized to grant to farmers who submit their early wheat crops to examination and make a request to this effect, a certificate testifying that the wheat offered for sale originates from seed treated by heat against loose smut [*Ustilago tritici*] and that it is in a satisfactory healthy condition.

Only the wheat obtained from seed treated by heat and in which the percentage of loose smut does not exceed 0.5 per cent. will be given a certificate of health guarantee. (*Journal Officiel Tunisien*, Tunis, 30 avril 1937, 55e année, nº 35, p. 559).

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NOTES

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